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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,358	12/12/2003	Manami Haraguchi	00684.003561	8715

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EXAMINER

CHEN, SOPHIA S

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,358

Applicant(s)

HARAGUCHI ET AL.

Examiner

Sophia S. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,5,8 and 10-15 is/are rejected.
- 7) ☒ Claim(s) 2-4,6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/30/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: r (page 3, line 7). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: P'max (Figure 6). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

- a. Page 4, line 3, "2" should be "102".
- b. Page 4, line 8, "3" should be "103".
- c. Page 23, line 10, the meaning of "JPC" is unclear.

Appropriate correction is required.

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claims 1-15 are objected to because of the following informalities:

- a. Claim 1, line 4, "on and image" should be "on an image".
- b. Claim 7, line 2, "C. hardness" should be "C hardness".
- c. Claim 7, line 3, "decrease" should be 'degrees".
- d. Claim 10, line 3, member 50-" should be "member is 50-".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 8, and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaizawa t al. (US Pat. No. 6,345,166 B1).

The patent discloses a developing apparatus comprising: a developer carrying member 8 for carrying a developer T to develop an electrostatic latent image formed on an image bearing member 1, the developer carrying member 8 having an elastic property (column 5, lines 40-43 and Figure 1); scraping/supplying member 9, contacted into the developer carrying member 8, for supplying the developer T to the developer carrying member 8 and for scraping the developer T off the developer carrying member 8, the scraping/supplying member 9 having an elastic property (column 5, lines 48-50 and column 8, lines 1-9); the developer carrying member 8 has a hardness which is higher than that of the scraping/supplying member 9 (inherently, because the foamed urethane rubber sponge is softer than the silicone rubber; column 8, line 67 to column 9, line 3 and column 10, lines 4-7); the scraping/supplying member 9 is provided with a supporting shaft 9a and an elastic foam member 9b on the supporting shaft 9a (column 8, line 65 to column 9, line 1); a relative peripheral speed between the developer carrying member 8 and the scraping/supplying member 9 is 50-600 mm/sec ($145 \text{ mm/sec} + 70 \text{ mm/sec} = 215 \text{ mm/sec}$; column 5, lines 42-47; column 6, lines 7-9 and 22-31); a direction of peripheral movement of the scraping/supplying member 9 is opposite a direction of peripheral movement of the developer carrying member 8 at the position of the contact (column 5, lines 50-53 and Figure 1); the developer T is non-magnetic one-component developer (column 5, lines 12-14); the developer T has a weight average particle size of 3-10 microns (column 14, lines 12-18); the developer T has a shape factor SF-1 of 100-150, and a shape factor SF-2 of 100-140 (column 13, lines 29-

31); and the developer carrying member 8 is contactable to the image bearing member 1 (column 5, lines 40-42 and Figure 1).

The patent differs from the instant claimed invention in not disclosing a radius of curvature of the scraping/supplying member is larger than a radius of curvature of the developer carrying member at a position of contact between the scraping/supplying member and the developer carrying member.

Although the patent does not specifically disclose the above radii, the patent discloses the diameter of the scraping/supply member being 16 mm (column 9, lines 23-24) and the diameter of the developer carrying member 8 being about 16 mm (column 10, lines 4-8). Since the scraping/supplying roller 9 (foamed urethane rubber sponge) is softer than the developer carrying member 8 (silicone rubber), it deforms more at the contact position. Therefore, it would have been obvious to one of ordinary skill in the art that the radius of curvature of the scraping/supplying member is larger than the radius of curvature of the developer carrying member at the position of contact between the scraping/supplying member and the developer carrying member.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaizawa et al. in view of Honda et al. (US Pat. No. 5,324,884)

Sakaizawa et al., as discussed above, differs from the instant claimed invention in not disclosing the developer carrying member having an Asker C hardness of 30-70 degrees.

Honda et al. discloses a developing apparatus comprising a developer carrying member 33; a scraping/supplying member 34; and the developer carrying member 33

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being formed of a conductive silicone rubber having an Asker C hardness of 30-70 degrees (35 degrees; column 7, lines 51-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the hardness as taught by Honda et al. to the developer carrying member of Sakaizawa et al. because they both are formed of the same material (silicone rubber).

Allowable Subject Matter

11. Claims 2-4, 6, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamazaki et al. (US Pat. No. 4,893,151) discloses a developing apparatus comprising a non-elastic developer roller and an elastic toner supplying/scraping roller.

Saito et al. (US Pat. No. 6,151,473) discloses a developing apparatus comprising a conductive developing roller having a diameter of 20 mm; an elastic developer supplying/scraping roller having a diameter of 16 mm; and a rotational speed of the developing roller being set to 180 r.p.m.

Kawamura et al. (US Pat. No. 6,738,593 B2) discloses a developing apparatus comprising a developer roller and a developer supplying/scraping member being either a roller or a belt.


Sato et al. (US Pat. No. 6,868,247 B2) discloses a developing apparatus comprising a non-elastic developer roller and an elastic toner supplying/scraping roller.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (571) 272-2133. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
June 28, 2005